REMARKS

In the Office Action mailed August 11, 2004, the Examiner noted that claims 1-19, 22-25 and 28-39 were pending, that claims 20-21 and 26-27 have been withdrawn from consideration, and rejected claims 1-19, 22-25 and 28-39. Claims 1, 22, 31 and 33-39 have been amended, new claims 40 and 41 have been added and, thus, in view of the forgoing claims 1-19, 22-25 and 28-41 remain pending for reconsideration which is requested. No new matter has been added. The Examiner's rejections are traversed below.

On page 2 of the Office Action, the Examiner rejected claims 1-4, 9, 11, 12, 14, 28, 31, 34, 35, 38 and 39 under 35 U.S.C. § 102 as anticipated by Hanrahan. Page 4 of the Office Action rejects claims 5-7, 13, 15, 16, 17-19 and 29 under 35 U.S.C. § 103 over Hanrahan and Daniels. Page 8 of the Office Action rejects claims 22-24, 33 and 37 under 35 U.S.C. § 103 over Hanrahan and Daniels. Pages 9 and 10 of the Office Action reject claim 25 under 35 U.S.C. § 103 over Hanrahan, Daniels and Morioka. As can be seen, the primary reference used in the rejection is Hanrahan.

The present invention is directed to painting with "tangent space" brushes:

> The present invention is directed to a tangent-space painting system, offering a high degree of predictability as a brush conforms to an underlying surface curvature. More particularly, the present invention relates to a tangent space brush that paint directly onto the surface of the three dimensional (or higher) object, providing an easy way for a user to paint directly onto a three dimensional object, without having to manipulate a corresponding 2D texture.

(See Application page 1, paragraph 2)

As noted above, the primary reference cited by the Examiner is "Direct WYSIWYG Painting and Texturing on 3D Shapes" by Hanrahan et al.

The Examiner is requested to note that Hanrahan, when originally published in the Siggraph proceedings, had two pages that were mistakenly swapped (218, 219). That is page 218 actually follows page 219. This appears to be the case for the version of Hanrahan being used by the Examiner (see how section "4." appears on page 218 while section "3." appears on page 218). We use the original (incorrect) page numbers herein.

Hanrahan notes that there are three distinct and different methods for 3D painting (see pg. 219, right col.): parameter-space; screen-space; and tangent-space. The Hanrahan paper only implements method #1, the so-called parameter-space. This is stated at the top of page 218 (which follows page 219): "Since parameter space brushes can be implemented much like 2D brushes in a 2D paint program, that method is used at the lowest level to implement that

actual painting into texture maps." (See page 218, left col.). The next few sentences show that they have not implemented or described how to implement direct screen-space or tangent-space 3D painting: "The other two methods could be implemented... ." (See page 218, left col.). Hanrahan appears to suggest that the effect of tangent space brush painting could be accomplished by using a conversion technique of converting the brush into a parameter space brush and distorting it but notes the difficulty associated with approximations (see page 218, left col., lines 7-12). Hanrahan does not describe teach how to solve this difficulty or overcome this problem. Finally, Hanrahan admits that the conversion technique does not teach the tangent-space method: "**Unfortunately, this technique does not work for tangent-space brushes.**" (See Hanrahan, page 218, left col., lines 18-19, bold emphasis added).

Thus, as shown above, Hanrahan does not teach or suggest direct tangent space brush painting.

In contrast, the present directly paints a tangent space brush onto a 3D object "painting a tangent space brush directly onto a surface of the area of the displayed parametric object in the three dimensional or higher space" - claim 1, see also claims 1, 22, 31and 33-39).

Daniels and Morioka add nothing to Hanrahan with respect to tangent space brush painting.

It is submitted that the invention of the independent claims distinguishes over the prior art and withdrawal of the rejection is requested.

The dependent claims depend from the above-discussed independent claims and are patentable over the prior art for the reasons discussed above. The dependent claims also recite additional features not taught or suggested by the prior art. For example, claim 6 calls for determining an intersection using a world coordinate, a viewing direction and the object. The prior art does not tech or suggest such. It is submitted that the dependent claims are independently patentable over the prior art.

New claim 40 emphasizes the tangent spaced painting directly onto the surface while claim 41 further emphasizes accounting for the tangent plane in the painting. Nothing in the prior art teaches or suggests such. It is submitted that these new claims, which are different and not narrower than prior filed claims, distinguishes over the prior art.

It is submitted that the claims are not taught, disclosed or suggested by the prior art. The claims are therefore in a condition suitable for allowance. An early Notice of Allowance is requested.

If any further fees, other than and except for the issue fee, are necessary with respect to this paper, the U.S.P.T.O. is requested to obtain the same from deposit account number 19-3935.

Respectfully submitted,

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